NON-PUBLIC?: N
ACCESSION #: 8911160181
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Beaver Valley Power Station, Unit 2 PAGE: 1 OF 3

DOCKET NUMBER: 05000412

TITLE: Reactor Trip and Control Room Emergency Bottled Air Pressurization System Actuation
EVENT DATE: 01/27/88 LER #: 88-002-01 REPORT DATE: 10/30/89

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: T. P. Noonan, General Manager of Nuclear Operations TELEPHONE: (412) 643-1258

COMPONENT FAILURE DESCRIPTION:
CAUSE: X SYSTEM: EA COMPONENT: XX51 MANUFACTURER: I005
REPORTABLE NPRDS: N

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT:

During normal plant testing the 21C Service Water Pump was shutdown. At this time the 21A Service Water Pump discharge pressure transmitter failed downscale resulting in the auto start of the 21A Emergency Service Water Pump. At 0152 hours, the 21A Emergency Service Water pump was shutdown and 62 milliseconds later, the 4KV Bus 2A Supply Breaker (ACB-42C) tripped on phase overcurrent. The loss of the 2A Bus caused the 21A Reactor Coolant Pump to trip on undervoltage resulting in a plant trip. The auto-transfer of the 2A Bus did not occur due to the overcurrent trip. De-energizing the 2AE Bus caused the No. 1 Emergency Diesel Generator to automatically start and energize the 4KV Emergency Bus 2AE. During this transient, the radiation monitors for the Unit 2 Control Room de-energized momentarily resulting in actuation of the control room emergency bottled air pressurization system (CREBAPS). The Service Water Pump discharge pressure transmitter was calibrated

satisfactorily and is scheduled for replacement. A modification to prevent a CREBAPS actuation on a loss of power to the Unit 2 control room radiation monitors is being evaluated. The cause of the ACB-42C trip is under investigation. The results of the investigation is provided in this report. There were no safety implications to the public as a result of this event as all protective systems actuation as designed.

END OF ABSTRACT

On 1/27/88 at 0049 hours, operations personnel were preparing to perform the Operating Surveillance Test (OST) on the 21B Service Water Pump. At 0052 hours the 21C Service Water Pump was shutdown to support the performance of this OST. Upon shutdown of the pump, the 21A Service Water Pump discharge pressure transmitter 2SWS-PT113A failed downscale which caused the automatic start of the 21A Emergency Service Water Pump.

At 0152 hours, after verifying that no actual low service water pressure condition existed, the 21A Emergency Service Water Pump was shutdown and 62 milliseconds later the 4KV bus 2A supply breaker (ACB-42C) tripped on phase overcurrent, de-energizing the 4KV Bus 2A. The loss of voltage on 2A 4KV Bus resulted in an undervoltage trip of the 2RCS-P21A 4KV Breaker and all motor loads powered from that bus. The trip of the 2RCS-P21A caused a low flow reactor trip when 2 of 3 RCS loop 21A flow sensors decreased below 90%. The No. 1 Emergency Diesel Generator started and re-energized the 2AE 4KV Bus, automatically sequencing on 2CHS-P21A, 2SIS-P21A, 2SWS-P21A, 2FWE-21A, emergency motor control centers powering loads including the CREBAPS Radiation Monitors, and emergency safety feature ventilation units. During this transient, the radiation monitors for the Unit II control room de-energized momentarily resulting in the actuation of the control room emergency bottled air pressurization system (CREBAPS).

The operators stabilized the plant using emergency procedures. At 0219 hours, CREBAPS was returned to service after verifying that there were no initiating signals present due to a CIB, chlorine detection, control room radiation dose rate or manual actuation. The NRC was notified in accordance with 10 CFR 50.72 at 0251 hours.

The specific reason the service water pump discharge pressure transmitter 2SWS-PT113A failed downscale could not be determined. The pressure transmitter indication recovered without any maintenance. Subsequent calibration checks revealed no abnormality and the instrument was declared operable. 2SWS-PT113A is scheduled to be replaced with a new transmitter.

The cause of the ACB-42C trip was a 51-VA207X WL relay being tripped from one of seven overcurrent and or ground relays. None of these relays were found targeted and the cause of the 51-VA207X WL relay actuation is under investigation. All seven relays along with the WL relay have been replaced and will be returned to their vendor for further testing and evaluation. The vendor performed various tests, including trip force checks, trip setpoint checks, DC surge tests, coil dropout voltage tests, and a physical inspection of the WL relay. No problems were identified by the vendor. Radio frequency testing was performed to determine if this condition may have caused the WL relay operation, however, these tests did not cause relay actuation. No cause for relay actuation has been identified. No additional problems have occurred with these relays following this event.

The CREBAPS system actuates on a high-high control room radiation alarm, a Containment Isolation Phase B (CIB) signal, a chlorine detection signal, a manual actuation signal at either Unit or a loss of power to the Unit 2 control room radiation monitors. The Unit 1 control room radiation monitors have been modified so as to not cause a CREBAPS actuation on a loss of power. A modification to prevent a CREBAPS actuation on a loss of power to the Unit 2 control room radiation monitors is being evaluated. There were no safety implications to the public as a result of this event. The system functioned as designed to initiate CREBAPS on a loss of power to the Unit 2 control room radiation monitors. The emergency Diesel Generator functioned as designed and energized the 4KV Bus 2AE. This event was within the bounds of the stations safety analysis (FSAR, Section 15.2.6 Reactor Trip from Loss of Offsite Power). There has been one previous occurrence of a CREBAPS actuation (Unit 1 LER 87-014-00).

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ND3MNO:1982

Beaver Valley Power Station, Unit No. 2
Docket No. 50-412, License No. NPF-73
LER 88-002-0

United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Gentlemen:

In accordance with Appendix A, Beaver Valley Technical specifications, the following revised Licensee Event Report is submitted:

LER 88-002-01, 10 CFR 50.73.a.2.iv, "Reactor Trip and CREBAPS actuation due to Loss of the "2A" 4KV Bus".

Very truly yours,

T. P. Noonan
General Manager
Nuclear Operations

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Attachment

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